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CENTRAL NERVOUS SYSTEM TISSUE PREPARATION FOR VIEWING BY PROJEC--ETC(U)
MAR 77 C H BONNEY, G E CONLEY

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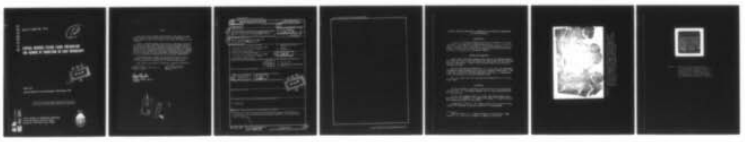

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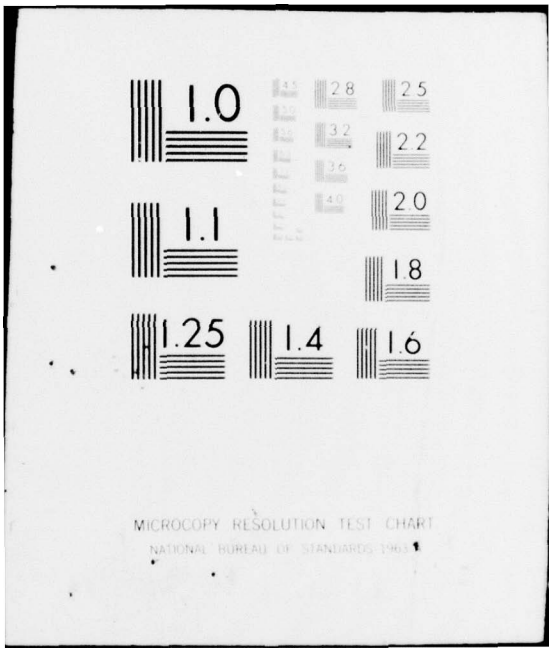
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Report SAM-TR- 77-6

CENTRAL NERVOUS SYSTEM TISSUE PREPARATION FOR VIEWING BY PROJECTION OR LIGHT MICROSCOPY

March 1977

Interim Report for Period November 1975-October 1976

USAF SCHOOL OF AEROSPACE MEDICINE
Aerospace Medical Division (AFSC)
Brooks Air Force Base, Texas 78235

NOTICES

This interim report was submitted by personnel of the Radiation Biology Branch, Radiation Sciences Division, USAF School of Aerospace Medicine, Aerospace Medical Division, AFSC, Brooks Air Force Base, Texas, under job order 7757-05-10.

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This report has been reviewed by the Information Office (OI) and is releasable to the National Technical Information Service (NTIS). At NTIS, it will be available to the general public, including foreign nations.

This technical report has been reviewed and is approved for publication.

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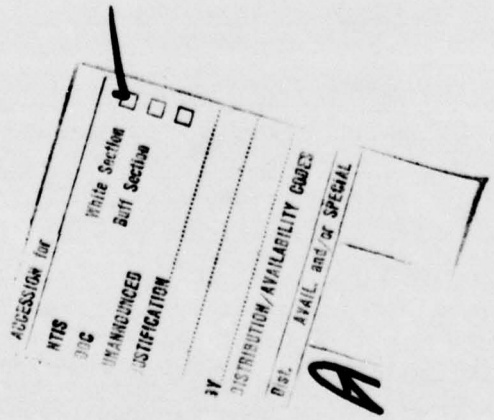

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20. ABSTRACT (Continue on reverse side if necessary and identify by block number)

A method of projecting sections of brain tissue using a 35-mm projector is presented. This technique allows anatomic material to be conveniently shown to groups.

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CENTRAL NERVOUS SYSTEM TISSUE PREPARATION FOR VIEWING BY PROJECTION OR LIGHT MICROSCOPY

INTRODUCTION

A method of utilizing standard histological techniques for preparing slides to be used with a 35-mm slide projector, as well as used for light microscopy study, is presented. This technique permits gross anatomical structures of the brain to be projected for auditorium viewing as well as to be used for histological studies.

METHODS AND MATERIALS

Brain tissue from rhesus monkeys was fixed in 10% buffered formalin. The tissue was later rinsed and placed into 30% alcohol for 24 hours and then into 50% alcohol. Frozen tissue sections were cut at 10 μm on a sliding microtome.

The cut sections were mounted on 2" x 2" (5.1 x 5.1 cm) cover-glass transparency masks designed to be used with standard 35-mm slides.[1] The tissue was stained with standard hemotoxylin and eosin. A large glass cover slip was used to cover the stained tissue.

The cover glass and cover slip were then mounted into 2" x 2" aluminum frames.

DISCUSSION

The gross anatomic structures of the brain can be seen and differentiated (Fig. 1). The framed assembly (Fig. 2) can be projected with a 35-mm projector.

The use of a standard cover slip rather than another thick cover glass allows the assembly to be moved to the stage of a light microscope for viewing the tissue for cell types.

Preparation of tissue in this fashion allows for a low-cost tissue library for classroom or seminar instruction in neuroanatomy.

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[1] EMDE one-piece 2" x 2" aluminum frames with cover glass. EMDE Products, Inc., 2040 Stoner Avenue, Los Angeles, California.

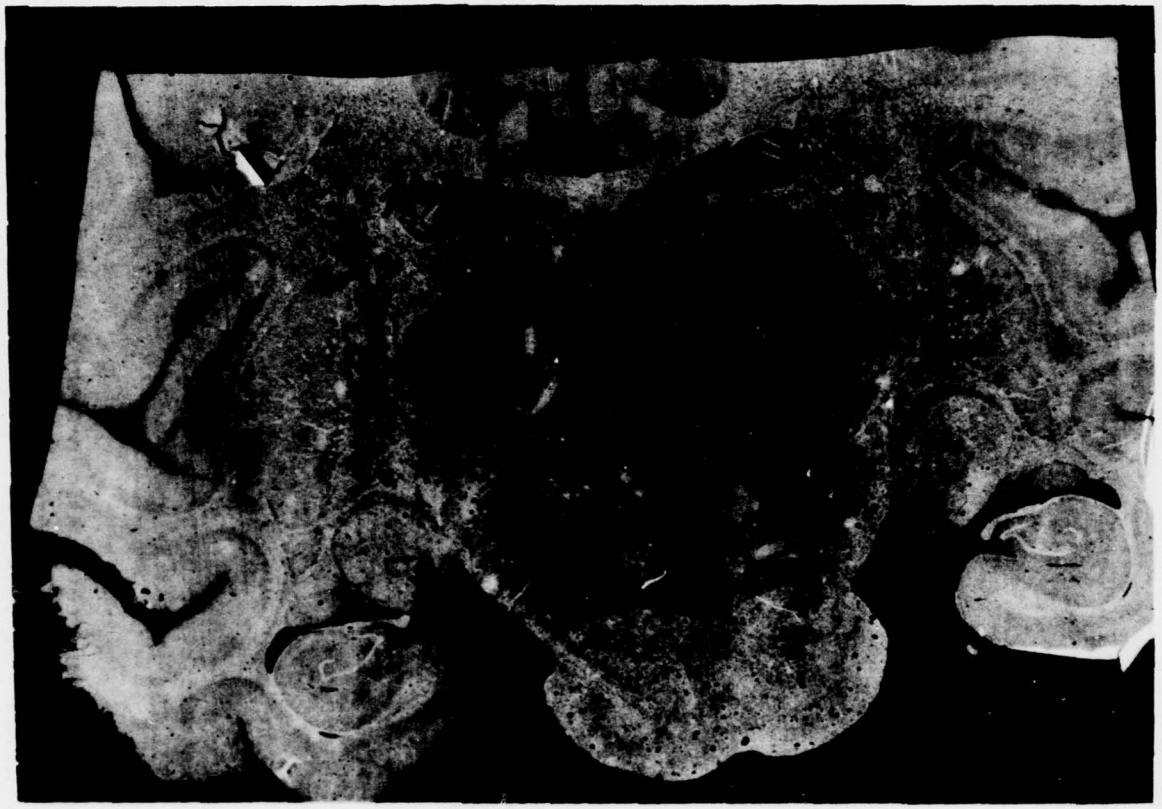

Figure 1. Central nervous system material processed using standard histologic techniques to produce the stained specimen. The holes in tissue are from ice formation as the tissue was frozen for sectioning. This can be avoided by varying the technique, or utilizing paraffin sections.

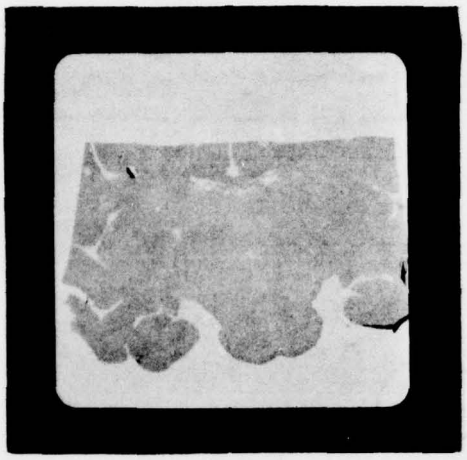

Figure 2. Shows the stained tissue (Fig. 1) as the negative printed directly from the tissue, mounted in a 2" x 2" slide mount for 35-mm projection. The projection of the slide allows the same differentiation of structure.